

ABSTRACT OF THE DISCLOSURE

A method of manufacturing an array of microstructures, such as a micromirror array assembly (10, 20) for use in optical modules (5, 17) in a wireless network system, is disclosed. The micromirror array assembly (10, 20) includes a plurality of mirrors (29) monolithically formed from a silicon wafer (70) with a frame (43), attached by way of hinges (55) and gimbal portions (45). The wafer is temporarily bonded to a support wafer (60) while permanent magnets (53) are attached to each of the gimbal portions (45) associated with the mirrors (29), through holes etched through the mounting wafer (60). The resulting frame (43) is then mounted to a coil driver assembly (50) so that coil drivers (34) can control the rotation of each mirror (29), under separate control from control circuitry (14, 24). The micromirror array assembly (10, 20) is able to support higher signal energy at larger spot sizes, and also enables multiplexed transmission and receipt, as well as sampling of the received beam for quality sensing. Yield loss is avoided in the manufacture of the micromirror array assembly (10, 20) through the bonding of the mirror wafer (60) to the support wafer (70) while the magnets (53) are being attached.